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| 10/720,622 | 11/24/2003 | David B. Lomet | MSFT-2756/302351 | 4249 |

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| EXAMINER | |
|---|---|
| LE, MIRANDA | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2167 | |

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/720,622 | LOMET ET AL. | |
| | Examiner | Art Unit | |
| | Miranda Le | 2167 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04/05/04, 11/24/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Preliminary Amendment*

1. Applicant's Preliminary Amendment, filed 04/06/2004, has been received, entered into the record, and considered.

### *Information Disclosure Statement*

2. Applicants' Information Disclosure Statement, filed 04/05/04, 11/24/03, have been received, entered into the record, and considered. See attached form PTO-1449.

### *Claim Objections*

3. Claims 18, 19 are objected to because of the following informalities:

Claim 18, line 4, "the log,." should be changed to "the log.".

Claim 19, line 4, "the table entry" should end with a period (.).

Appropriate correction is required.

### *Claim Rejections - 35 USC § 101*

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1, 15 fail to provide a practical application that produces a useful, concrete and tangible result. Specifically, a tangible result, in accordance with the current "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" is a real world result.

While optimizing recovery logging could reasonably be considered a tangible result, the body of claims 1, 15, 25 do not appear to actually support the preamble by including a step or steps, which accomplish that act. Additionally, claim 15 appears to have no claimed result under the condition where "in response to determining the first message has been stably logged".

Claims 2-14, 16-24 are dependent upon claims 1, 15, respectively, suffer from deficiencies similar to their respective base claim, and therefore are likewise rejected.

Claim 25 has the same type of issues as claims 1, 15, therefore, is rejected under similar rationale. Plus, the specification, paragraph [0026], defines "computer-readable media" as including both storage media (i.e., memory) and communication media (i.e., carrier wave). A computer-readable medium including a carrier wave, or signal, is non-statutory subject matter as set forth in MPEP 2106 (IV)(B)(2)(a). As such, claim 25 is not limited to tangible embodiments, the claim is not limited to statutory subject matter and is therefore non-statutory.

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter applicant regards as the invention.

a) Claim 1 recites the limitation "the return message" in line 4. There is insufficient antecedent basis for this limitation in the claim.

b) Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter applicant regards as the invention. The "first message" language on lines 4, 5, appears to be ambiguous in that it does not clearly indicate reference to the recited "a first return message" (line 2), or the implied "first message" that appears to be required to have estimated the generation of "a first return message".

In this regard, the "a second message" (line 5) recited for a message sent to the component suggests applicants intent to distinguish "first message"/"second message" from "first return message"/(potentially) "second return message".

c) Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted step is the condition where "in response to determining the first message has been stably logged".

Claims 12-14, 16-24 are dependent upon claims 1, 15, respectively, and therefore likewise rejected.

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Pitchford et al. (US Patent No. 6,178,457 B1).

Pitchford anticipated independent claim 25 by the following:

**As per claim 25,** Pitchford, in Figs. 1-3B, shows all the claimed subject matter of a computer-readable medium including computer-executable instructions for:

sending a first call message (i.e. "first call" in Abstract, or step 31 in Fig. 3A; col. 5, lines 27-42) to a called component 22 from a calling component 21;

sending a second call message (i.e. "next call" in Abstract, or step 41 in Fig. 3B; col. 5 lines 52-64) to the called component from the calling component (Abstract, col. 4 line 61 to col. 5 line 10; col. 5 lines 52-64);

logging a return message (i.e. "session ID", col. 5, lines 27-42) to the first message in a stable log 24 (i.e. an entry is created by attaching to a Shared Persistent Resource at col. 4, line 62 to col. 5, line 10) associated with the called component 22 (Abstract, col. 5 lines 52-64); and

logging the return message to the first message in a stable log associated with the calling component 21 when the second call message to the called component is sent (i.e. The session ID is stored by the client for use when making another call from the client to the server, col. 5, lines 43-50).

### *Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitchford et al. (US Patent No. 6,178,457 B1), in view of Lomet et al. (US Patent No. 6,182,086 B1).

**As per claim 1,** Pitchford teaches a system for optimizing recovery logging, the system comprising:

a storage device 24 (Fig. 2);

a calling component module 21, the calling component module adapted to sending a first message (i.e. "first call" in Abstract, or step 31 in Fig. 3A; col. 5 lines 27-42) and a second message (i.e. "next call" in Abstract, or step 41 in Fig. 3B; col. 5 lines 52-64) to a called component 22, and logging the return message to the storage (i.e. an entry is created by attaching to a Shared Persistent Resource at col. 5 lines 3-4) when the second message to the called component is sent (Abstract, col. 4 line 61 to col. 5 line 10); and

Pitchford teaches a called component storage for storing information associated with the return message (i.e. When the session ID is returned from the engine component 23, an entry is created by attaching to a Shared Persistent Resource, col. 4, line 62 to col. 5, line 10). But Pitchford does not explicitly teach a called component table.

Lomet teaches a message lookup table that keeps copies of the logged replies in Abstract.

It would have been obvious to one of ordinary skill of the art having the teachings of Pitchford and Lomet at the time the invention was made to modify the method for controlling and tracking client access to server software, as disclosed by Pitchford to include a called component table for storing information associated with the return message to keep copies of the logged replies that can be used during client recovery in place of the logged records to avoid searching the server's stable log file, as taught by Lomet. One of ordinary skill in the art would be motivated to make this combination in order to help recover either the client or server side in the event of a system crash in view of the teachings of Lomet, as doing so would give the added benefit of speeding recovery, as taught by Lomet in Abstract.

**As per claim 2,** Lomet teaches a highest log sequence table for storing a highest log sequence number (i.e. message sequence number, col. 8, line 29; LastMSN 124 in Fig. 6) written to a memory buffer (i.e. log buffer in abstract) and a highest log sequence number written to the storage device (i.e. stable log in abstract), (col. 8, lines 21-44).

**As per claim 3,** Lomet teaches the called component table comprises a log sequence number (i.e. message sequence number, col. 8, line 29) associated with the called component for determining a status of the return message (i.e. the active application table contains status information about outgoing application for which the server or the client is responsible, col. 9, lines 33-37).

**As per claim 4,** Lomet teaches the status of a return message is determined by comparing the highest log sequence number written to memory and the highest log sequence number written to the storage device and a log sequence number associated with the called component (LastMSN-StableMSN reaches some threshold, col. 12, lines 24-43).

**As per claim 5,** Lomet teaches a status of the called component's return message is reset when the message is logged to the storage device (i.e. when the client-side applications completes, the client informs the server using a special notice of termination. In response, the server removes the applications from its active application table and all corresponding replies form the message look up table and stable log file, col. 6, lines 1-7).

**As per claim 6,** Lomet teaches the storage device stores a stable log associated with the calling component (i.e. logging of both the request and the reply at either client or server side, col. 8, lines 12-14).

**As per claim 7,** Lomet teaches a storage device for storing a stable log associated with the called component (i.e. logging of both the request and the reply at either client or server side, col. 8, lines 12-14).

**As per claim 8,** Pitchford teaches the calling component module sends at least one message to a plurality of called components (i.e. a server component 22, engine component 23, and repository 17 in Fig. 2; and col. 4, line 61 to col. 5, line 12).

**As per claim 9,** Lomet teaches the calling component persists over a system failure (i.e. if the client sends a request and subsequently crashes before receiving the reply, col. 7, lines 50-54).

**As per claim 10,** Lomet teaches the called component persists over a system failure (i.e. server fails after receiving the request and after transmitting a reply, col. 7, lines 64-66).

**As per claim 11,** Lomet teaches a stable log associated with the calling component persists over a system failure (i.e. during client's normal recovery process, the client will regenerate and resubmit the same request, col. 7, lines 52-54).

**As per claim 12,** Lomet teaches a stable log associated with the called component persists over a system failure (i.e. server's recovery, col. 7, lines 64 to col. 8, lines 13).

**As per claim 13,** Lomet teaches only the last message sent by the called component is guaranteed to be stably stored with the called component (i.e. to capture the client-server application, the server's resource manager records the reply in the log buffer and commits the reply record to the stable log prior to sending the reply back to the client, col. 5, lines 13-17).

**As per claim 14,** Pitchford teaches the stable log comprises a component identifier (i.e. session ID, col. 5, line 5) and a message (col. 4, line 61 to col. 5, line 11).

10. Claims 15-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lomet et al. (US Patent No. 6,182,086 B1), in view of Pitchford et al. (US Patent No. 6,178,457 B1).

**As per claim 15,** Lomet teaches a method of recovery logging comprising:

determining whether a first return message received from a called component (i.e. server in Abstract) has been stably logged (i.e. commits the reply record to the stably log before the reply is sent back to the client in Abstract);

in response to determining that the first message has not been stably logged, logging at least the first message to a stable log (i.e. the logging of the reply is only forces log action per request/reply interaction, col. 7, lines 46-47);

Lomet does not explicitly teach logging at least the first message to a stable log before a second message is sent to the component.

Pitchford teaches the client stores its session ID (i.e. return message from the first call), and every time it needs to make a request to the server, it includes the session ID with a request (i.e. second message, col. 3, lines 50-53).

It would have been obvious to one of ordinary skill of the art having the teachings of Lomet and Pitchford at the time the invention was made to modify the method for speeding recovery of Lomet to include logging at least the first message to a stable log before a second message is sent to the component to store a persistent collection of data pairs to overcome the problem of disjointed requests on the server by the clients, as taught by Pitchford. One of ordinary skill in the art would be motivated to make this combination in order to complete the work requested by the client in view of the teachings of Pitchford, as doing so would give the

added benefit of controlling and tracking client access to server software being executed by the computer system (col. 1, lines 31-36).

**As per claim 16,** Lomet teaches determining whether the first return message received form the called component has been stably logged comprise:

in response to determining that an entry for the component is not in a table of information associated with called components, adding an entry for the first message to the table, the entry comprising an identifier for the component, and a log sequence number set to a lowest possible value (i.e. the message entries for individual applications are kept in chronological order of the MSNS, col. 12, lines 44-63).

**As per claim 17,** Lomet teaches in response to determining that the entry for the component is in the table of information associated with called components, comparing a highest stably logged sequence number with the log sequence number in the table entry (LastMSN-StableMSN reaches some threshold, col. 12, lines 24-43).

**As per claim 18,** Lomet teaches in response to determining that the highest stably logged sequence number is greater than the log sequence number in the entry, proceeding to call the component without forcing the log (i.e. entries can be discarded on a per application basis as permitted by the logging and installation activities of each application, col. 12, lines 43-63).

**As per claim 19,** Lomet teaches in the response to determining that the highest stably log sequence number is less than the log sequence number in the table entry, forcing the log so that the highest stably logged record has a higher log sequence number than the table entry (i.e. All message log records that the server has on its stable log file with an MSN smaller than the server RedoMSN, col. 12, lines 24-63).

**As per claim 20,** Lomet teaches updating the highest stably logged log sequence number to the highest log sequence number written to the stable log (i.e. a message sequence number that is unique and monotonically increasing within each client application, col. 10, lines 15-24).

**As per claim 21,** Pitchford teaches sending at least one message to a plurality of called components before forcing a log (i.e. a server component 22, engine component 23, repository 17 in Fig. 2; and col. 4, line 61 to col. 5, line 12).

**As per claim 22,** Lomet teaches the called component persists over a system failure (i.e. server fails after receiving the request and after transmitting a reply, col. 7, lines 64-66).

**As per claim 23,** Lomet teaches the calling component persists over a system failure (i.e. if the client sends a request and subsequently crashes before receiving the reply, col. 7, lines 50-54).

**As per claim 24,** Lomet teaches messages sent to the called component are uniquely identified (i.e. a unique application identifier, a message sequence number, col. 10, lines 15-24).

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax number to this Art Unit is (571)-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Miranda Le
June 08, 2006

GRETA ROBINSON
PRIMARY EXAMINER